



Declaration of M. Ibrahim Sezan under 37 C.F.R. 1.132

I, M. Ibrahim Sezan, hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that I have full knowledge and understanding of the fact that willful false statements and the like made herein are punishable by fine or imprisonment, or both, under 17 U.S.C. 1001, and that any such statements may jeopardize the validity of the above-referenced application or of any patent granted on it.

1. I am a graduate with a B.Sc. Electrical Engineering and B.Sc., in Mathematics (double major), from Bogazici University (formerly Robert College), Istanbul, Turkey, 1980.

2. I am a graduate with a M.Sc. Applied Physics, from Stevens Institute of Technology, 1982.

3. I am a graduate with a M.Sc. Electrical, Computer and Systems Engineering, from Rensselaer Polytechnic Institute, 1983.

4. I am a graduate with a Ph.D Electrical, Computer and Systems Engineering, from Rensselaer Polytechnic Institute, 1984.

5. I was a Member of the *Multidimensional Signal Processing Committee of IEEE Signal Processing Society* (1990-2003).

6. I was an Associate Editor of the *IEEE Transactions on Image Processing* (1992-1995).

7. I was an Associate Editor of the *IEEE Transactions on Medical Imaging* (1988-1992).

8. I have been an author on several journal publications, including:

- A. Kokaram, N. Rea, R. Dahyot, M. Tekalp, P. Bouthemy, P. Gros, I. Sezan, "Browsing sports video-the challenge of choice," Accepted for publication in *IEEE Signal Processing Magazine*, 2006.
- B. Li, J. Errico, H. Pan, and M. I. Sezan, "Bridging the semantic gap in sports video summarization and retrieval," *Journal of Computer Vision and Image Understanding: Special Issue on Video Retrieval and Summarization*, 2004.
- N. Dimitrova, H-J. Zhang, B. Shaharar, M. I. Sezan, T. Huang and A. Zakhor, "Applications of video-content analysis and retrieval," *IEEE Multimedia*, July 2002.
- P. Salembier, R. Qian, N. O'Connor, P. Correia, M. I. Sezan, and P. van Beek, "Description schemes for video programs, users and devices," *Signal Processing: Image Communications*, September 2000.

9. I have been an author on several conference publications including:

- J. H. Errico and M. I. Sezan, "Presence based collaborative recommender for networked audiovisual displays," Submitted to *Intelligent User Interface (IUI) Conference* 2006.

- B. Li and M. I. Sezan, "Automatic keystone correction for smart projectors with embedded camera," IEEE Int. Conf. on Image Processing (ICIP 2004), Singapore, October 2004.
- P. van Beek, S. Desphande, H. Pan and I. Sezan, "Adaptive streaming of high-quality video over wireless LANs," Visual Communications and Image Processing 2003, Proc. SPIE vol. 5308, Electronic Imaging, San Jose, CA, January 2004.
- B. Li and M. I. Sezan, "Semantic sports video analysis: Approaches and new Applications," IEEE Int. Conf. on Image Processing (ICIP 2003), Barcelona, Spain, September 2003.
- M. Ferman, P. van Beek, J. Errico and I. Sezan, "Multimedia Content Recommendation Engine with Automatic Inference of User Preferences," IEEE Int. Conf. on Image Processing (ICIP 2003), Barcelona, Spain, September 2003
- B. Li, H. Pan and I. Sezan, "A general framework for sports video summarization with its application to soccer," IEEE ICASSP 2003, Hong Kong, April 2003.
- H. Pan, B. Li, and M. I. Sezan, "Automatic Detection of Replay Segments in Broadcast Sports Programs by Detection of Logos in Scene Transitions," IEEE ICASSP 2002 Conference, April 2002.
- B. Li and M. I. Sezan, "Event detection and summarization in sports video," IEEE Workshop on Content Based Access of Image and Video Libraries," Kauai, HI, December 2001.
- B. Li and M. I. Sezan, "Adaptive video background replacement," IEEE ICME 2001, Tokyo, August 2001.
- H. Pan, P. van Beek and M. I. Sezan, "Detection of slow-motion replay segments in sports video for highlights generation," IEEE ICASSP 2001 Conference, Salt Lake City, UT, May 2001.
- P. van Beek, M. I. Sezan, D. Poncelcon, and A. Amir, "Content Description for Efficient Video Navigation, Browsing and Personalization," IEEE Workshop on Content Based Access of Image and Video Libraries, Hilton Head, SC, June 2000.
- D. Messing and M. I. Sezan, "Improved multi-image resolution enhancement for color images captured by single-sensor CCD cameras," IEEE ICIP 2000 Conference, Vancouver BC, September 2000.

10. I am currently the director of the Information Systems Technology department at Sharp Laboratories of America, the assignee of the subject patent application.

11. All the inventors of the subject patent application are employees of Sharp Laboratories of America. Errico and VanBeck work in the Information Systems Technology department under my direction.

12. As a result of my education, professional training and experience, I am very familiar with video processing and presentation techniques for video.

13. I have read the patent application at issue in this case, and I am familiar with the subject matter claimed as inventive in the currently pending claims.

14. I have read the office actions issued by the patent office after examination of the application, and in particular, I understand the rejections and concerns expressed by the Examiner in the Office Action of April 13, 2006.

15. I have also reviewed the references cited by the patent office as the basis for rejecting the invention, and in particular Christel and Ahmad et al., which I read thoroughly in light of the invention.

16. Christel discloses a system for presenting video skims in which a user may enter a specific query to which certain frames of a video are "matched." The video skim is constructed by (1) identifying key frames in the video that match the query, and (2) based upon those matching frames, constructing a summarization that includes each of the matching frames in one or more video segments. The number of, and size of each video segment included in the summary depends on a user-selected compression rate.

17. Christel also includes a video scroll bar that shows the match locations and the selected portions of the video in the summary. The graphical display of FIGS. 5 and 6 includes two "timeline" bars, one comprised of the matching frames and the other comprised of the video segments built around those matching frames. As the summary is viewed, a time cursor sweeps through each of the respective bars, showing the viewer relatively how much of the summary has been viewed and how much of the video has been included in the summary.

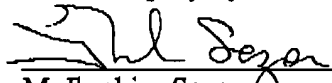
18. Neither the key frames nor the video segments displayed in the respective timelines of Christel are indicative of the semantic content of the summary.

19. It has been my experience that the term "semantic event" relates to the *meaning* of an event, and more specifically, the claim limitation of a "type of semantic event in said video" relates to a meaning of a particular type of event portrayed *in* the video. For example, if the video is of a basketball game, a type of semantic event *in* the video might include slam dunks, fast breaks, fouls, and injuries. If the video is an action movie, types of semantic events in the video might include car chases, explosions, and gunfights.

20. Ahmad discloses a browser for audiovisual content where a user can view summary information related to available content. In a specific embodiment, noted by the Examiner, Ahmad discloses a window showing, as an example, "news programs" available for viewing where any currently viewed news program is shaded in one color while news programs that have already been viewed are shaded in another color. *See* Ahmad at col. 16 lines 54-65. Presumably, were the window showing "action movies" or "documentaries" the window could be similarly marked to shade, for example, any currently viewed documentary one color and previously viewed documentaries another color. Thus, the different colored shadings, as taught by Ahmad, are not indicative of any semantic content *in* the video; rather, the differing visual indications are merely indicative of the *statistical property* of whether that viewer is either currently watching the program (shading in one color), has previously watched the program (shading in another color), or neither (no shading). The post-facto marking of content as being either watched or not watched cannot indicate anything meaningful about the events in a video created long before the user had the opportunity to watch the program.

21. In my opinion people working in the field would not consider the invention, as claimed in the patent application, to be old or obvious. In particular Christel and Ahmad are not properly combinable in the manner suggested by the Examiner. First, each of Christel's video skims are custom-created in response to a specific user inquiry by selecting key frames of a specific video and expanding segments around the key-frames by an amount dependent upon a user-selected compression ratio. Neither reference discloses a means by which particular key-frames of Christel, or frames in segments surrounding key frames of Christel's video skims, may be tagged as having been watched by a particular user. Such an embodiment would be particularly troublesome given that Christel's system is intended for multiple users in a library setting, hence marking individual frames in a video segment as having been watched/unwatched by any particular user would be pointless. Furthermore, even to the extent that a user had previously entered an identical query, or a similar inquiry at an earlier time such that specific segments in the currently compiled video skim were viewed earlier, the current presentation as a whole is intended to be watched sequentially. Thus, marking any segments in a compiled skim that may have been previously watched by a specific user would provide no material benefit, given that the current skim was specifically created to match a particular inquiry by the user.

By:


M. Ibrahim Sezan

Dated:

Aug. 12, 2006